

Algebra I

Lesson 3.4 – Solving 2-Step and Multi-Step Inequalities

Mrs. Snow, Instructor

When solving for the variable you may get an inequality that will have a combination of addition/subtraction and multiplication/division. More complicated equations need to be simplified if necessary by using order of operations, combining like terms or using the Distributive Property. Do this before you solve for the variable.

Solve:

$$7 - 2t \leq 21$$

$$-7 + 7 - 2t \leq -7 + 21$$

$$-2t \leq 14$$

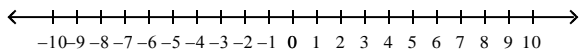
$$\left(-\frac{1}{2}\right) \left(-2t\right) \leq 14 \left(-\frac{1}{2}\right)$$

$$t \geq -7$$

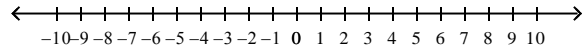
1. Isolate the term with the variable.
2. Using inverses clear out the constant
3. Using reciprocals clear out the coefficient
4. FLIP THE INEQUALITY SIGN!!!

Solve and graph:

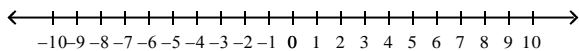
$$-12 \geq 3x + 6$$



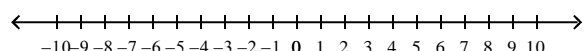
$$\frac{x + 5}{-2} > 3$$



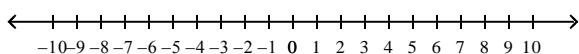
$$\frac{1 - 2n}{3} \geq 7$$



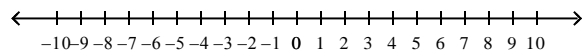
$$2m + 5 > 5^2$$



$$3 + 2(x + 4) > 3$$



$$\frac{5}{8} < \frac{3}{8}x - \frac{1}{4}$$



The average of Juan's two test scores must be at least 90 to make an A in the class. Juan made an 87 on his first test. What grades can he make on his second test to make an A in the class?

Marilyn got a new job at Star Furniture. She has been given an option for her monthly pay. Her first option is to receive a base salary of \$400 plus 8% commission on all her furniture sales. The second option is to get a flat monthly salary of \$1200. How much furniture would Marilyn have to sell a month to make more money on the first option?

| | |
|---|--|
| Find the square root: $-\sqrt{49}$ | Find the square root, round to the nearest 10 th : $\sqrt{23}$ |
| Write an inequality: x is greater than 2 | y is a positive number |
| h is a nonnegative number | Solve for x: $3(x + 2) - 6x + 6 \geq 0$ |